



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of

Nilsen et al

Atty. Ref.: 613-86; Confirmation No. 6277

Appl. No. 10/049,879

TC/A.U. 1732

Filed: May 30, 2002

Examiner: McDowell

For: CONTAINER PRODUCTION PROCESS

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February 4, 2005

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

**RESPONSE**

This is responsive to the Official Action of October 4, 2004. Petition is hereby made for a one month extension of time for which our check in the appropriate amount is attached.

Claims 1-10 are active in the application.

The examiner's attention is invited to the comprehensive Information Disclosure Statement filed October 12, 2004, just a few days after the current Official Action was mailed. With this response the relevant fee has been paid in order to assure consideration of the documents identified in that IDS.

The current Official Action examines claims 1-10 and finds claims 1-3 and 8 to be anticipated while the remaining claims are found to be unpatentable. Applicants now respond to these two rejections as stated in items 2 and 4 of the Official Action.

The Examiner alleges that claims 1-3 and 8 lack novelty in view of the Nowlin patent (US 5,539,076). This document is an equivalent of WO 95/11264 which is discussed in the International Preliminary Examination Report. Nowlin describes bimodal polyolefin resins which may be used in blow moulding to manufacture articles such as bottles, containers, fuel

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tanks and drums. The bimodal resins are prepared in a one stage polymerization process which is said to give rise to much improved interparticle homogeneity. The catalyst used in the manufacture of the resins in D1 is a dual site catalyst comprising two active sites, e.g. two metallocene sites. The inevitable result of polymerizing in a single stage using such a catalyst is a bimodal polymer.

However, such bimodal polymers must inherently include either two homopolymer components or two copolymer components. If a comonomer is used in a single stage reaction with a dual site catalyst as described in the Nowlin patent, it is inevitable that both sites will give rise to copolymers if comonomer is present. If no comonomer is used in the reaction, it is inevitable that both sites will give rise to homopolymer components. There is simply no way in which the process described in Nowlin can fall within the scope of applicants' claim 1 in which the bimodal HDPE to be blow moulded comprises a homopolymer and copolymer component.

The reference in column 2, lines 54 to 56 to admixtures of homopolymers and copolymers has to be read in conjunction with the disclosure at the top of column 4 that the resin products of the invention are produced by a catalyst which comprises two different transition metals. The Nowlin patent simply does not enable admixtures of homopolymers and copolymers to be formed using its process. It is therefore submitted that claims 1-3 and 8 must be novel.

The Examiner also relies on the Nowlin patent to allege obviousness of claims 4-7 and 9 but of course Nowlin specifically teaches away from the use of a homopolymer/copolymer resin since such a species can only be produced by blending or by using a two stage polymerization process. Nowlin teaches that both blending and a two stage polymerization process are disadvantageous (see the background section of the invention) and therefore specifically teaches away from the HDPE now claimed.

It is also noted that the polymers produced by the Nowlin process contain a large fraction of unsaturated side chains and are therefore crosslinkable (see column 3, line 51). When such polymers are extruded prior to blow moulding such side chains will tend to cross-link resulting in an unpredictable deterioration in processability. The presence of cross-linking does not improve the processability of polymers for use in blow moulding as it may do in polymers for the manufacture of films. The present invention is specifically directed towards the manufacture of containers and hence cross-linkability is not a property which is possessed by the polymers

produced by the present invention. Cross-linking may in fact be harmful to some blow moulding operations.

As is clear from claim 5 of the present invention, environmental stress cracking resistance is also a critical property when manufacturing blow moulded containers. The presence of a bimodal comonomer distribution has been found to enhance ESCR, an effect in no way suggested by Nowlin. The claims of the present invention specifically require that the HDPE is formed from a homopolymer and a copolymer ensuring that the HDPE is bimodal with respect to comonomer distribution as well as molecular weight distribution. Nowlin does not therefore suggest the present invention.

The Examiner's comments on the tensile modulus and comonomer properties in claim 4 are noted but it is not believed these are relevant since the Nowlin patent does not suggest the invention in claim 1.

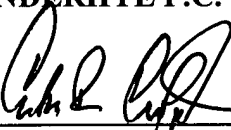
Further consideration of this application is requested taking into account the documents identified in the Information Disclosure Statement filed October 12, 2004. If for any reason the copies attached to that submission are unclear or the examiner needs further assistance, please contact the undersigned by telephone.

Further examination and favorable action are solicited.

Respectfully submitted,

**NIXON & VANDERHYE P.C.**

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